

REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 5-8 remain active in the application subsequent to entry of this Amendment.

The claims have been amended in order to more particularly point out and distinctly claim that which applicants regard as their invention. More specifically, the method is defined as including three successive steps. The first step is eluting the cation exchange column with the designated eluent. This is followed by detecting the cations eluted from the column and this is followed by preparing a chromatogram. These are the steps of the invention as carried out in the description, for instance at pages 7-9 and in particular working example 1. Elution is described on page 7 including temperatures, flow rates, etc. Detection is discussed at page 8, lines 6-12 and obtaining a chromatogram is specifically disclosed at page 9, line 6 in relation to Figure 1 of the drawings. The same procedure is used in the other working examples of the invention. Accordingly, the amendments made to claims 5-8 do not constitute added subject matter but instead carefully track the description of the invention.

Claims 5 and 6 are rejected as being anticipated by an article by Hajos while all four of the pending claims are rejected on the basis of the same article taken in conjunction with two supplementary references.

All of the rejections are flawed in that the primary reference is concerned with a very different type of procedure and analysis than the present application as defined in claims 5-8 as above amended.

Claims 5-8 relate to analysis of ions and are concerned with a method very different from the method disclosed in Hajos (Journal of Chromatography, 1997, pages 141-148). Claims 5-8 are above amended to specify the differences between the methods of the present invention and the method disclosed in Hajos.

As described in Section 3.2 "Instrumentation" on page 143 of Hajos, in the method disclosed in Hajos, the eluate from a cation exchange column (Ion Pac CS3 cation separator column) is treated with a suppressor (CMMS-1 micromembrane eluent suppressor) before conductivity detection. This technique is called ion suppression chromatography and requires a suppressor in addition to a cation separator column. In ion suppression chromatography, no system peak attributable to amino acids appears thus Hajos' procedure would not yield the same

result as does applicants' process -- *see* Figures 1-6.

In the present invention, the eluate from the cation exchange column goes straight to the detector, and actually, a system peak attributable to histidine appeared at a retention time of about 5 minutes in the chromatogram (Fig. 1) obtained in Example 1. In contrast, in Hajos, even though histidine was used as an eluent, no system peak attributable to histidine appeared, because of the use of ion suppression chromatography.

Applicants' claims 5-8 are amended to exclude ion suppression chromatography, on the basis of the disclosure in the specification. In addition, the present invention emphasizes the use of an eluent comprising a specific acid and a specific amino acid. Because it is clear that Hajos relates only to ion suppression chromatography, novelty of claims 5-8 is established.

Because in ion suppression chromatography, there is no need to consider adverse effects of system peaks in the first place, the problem to be solved by the present invention is not recognized in Hajos. Thus Hajos cannot suggest that amino acids such as histidine, when used as an eluent, give system peaks that adversely affect analyses of cations.

In addition, in Hajos, histidine is used simply to elute analytes (cations) from the cation exchange column (see 3.1 "Reagents and solutions" on page 143), and Hajos suggests nothing about improvement of peak shapes by the use of histidine. On the contrary, peak tailing occurred in the chromatograms in Hajos, despite the use of histidine. In this context, it is obvious that no attention is paid to improvement of peak shapes at all in Hajos. In contrast, in the present invention, an acid such as nitric acid is used to elute analytes (cations) from the cation exchange column (in Hajos, HCl is used just for pH adjustment), while an amino acid such as histidine is used for improvement of peak shapes (the amino acids recited in Claims 5-8 are preferred amino acids that improve peak shapes but give no system peaks having adverse effects on cation analyses).

Thus, the applicants have established novelty over Hajos for claims 5 and 6 (the only claims so rejected) so that it is clear that an eluent comprising a specific acid and a specific amino acid is used in analyses of cations by a different chromatographic technique from that disclosed in Hajos, to obtain effects which are not disclosed in Hajos.

Regarding the rejection of claims 5-8 as being "obvious", though the Examiner relies on paragraph 40 of Japan 06-018505 and paragraph 26 of Japan 08-257419 to reject Claims 5-8

under 35 U.S.C. 103(a), paragraph 40 of 06-018505 says that "the use of dilute phosphoric acid aqueous solution as the eluent is economically advantageous because it improves the durability of the column against ordinary stainless steel equipment for liquid chromatograph enough to survive a long run without degradation", and paragraph 26 of Japan 08-257419 says that "the eluent to be used may be any eluent generally used for cation analysis without any particular restrictions and may, for example, be an aqueous solution of tartaric acid, oxalic acid, citric acid, lactic acid, hydroxyisobutyric acid, nitric acid, hydrochloric acid, sulfuric acid, methanesulfonic acid, benzenesulfonic acid or toluenesulfonic acid or a salt thereof".

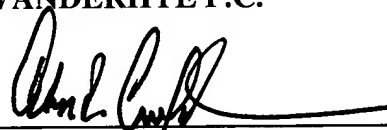
However, neither of these citations disclose the use of an eluent comprising an amino acid such as histidine in addition to an acid or improvement of peak shapes by adding an amino acid to the eluent. Therefore, rejections under 35 U.S.C. 102(b) and 103(a) are overcome.

For the above reasons it is respectfully submitted that the claims of this application define inventive subject matter. Reconsideration and favorable action are solicited. Should the examiner require further information, please contact the undersigned by telephone.

Respectfully submitted,

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